



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,603	04/09/2004	David B. Cross	MS1-1973US	1564
22801 7590 05/17/2010 LEE & HAYES, PLLC 601 W. RIVERSIDE AVENUE SUITE 1400 SPOKANE, WA 99201				
EXAMINER HENNING, MATTHEW T				
ART UNIT 2431		PAPER NUMBER		
NOTIFICATION DATE 05/17/2010		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

lhptoms@leehayes.com

Office Action Summary

Application No.

10/821,603

Applicant(s)

CROSS ET AL.

Examiner

MATTHEW T. HENNING

Art Unit

2431

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27, 29, 32, 33, 35-44 and 49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-16 and 49 is/are allowed.
- 6) ☒ Claim(s) 17, 29, 32, 33 and 35-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/9/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

1 This action is in response to the communication filed on 3/1/2010.

2 **DETAILED ACTION**

3 *Response to Arguments*

4 Applicant's arguments, filed 3/1/2010, with respect to claim 1 have been fully considered
5 and are persuasive. The rejection of claims 1-16 and 49 has been withdrawn.

6 The examiner notes that two voicemail messages were left for the applicants'
7 representative, Jason Lindh, on 5/3/2010 and 5/6/2010, proposing amendments to place the
8 application in condition for allowance. Neither voicemail was returned. As such, the examiner
9 is issuing the following office action below.

10 Applicant's arguments pertaining to claims 17 and 33 filed 3/1/2010 have been fully
11 considered but are not found persuasive. The newly claimed limitations have been addressed
12 accordingly below.

13 Regarding the applicants' argument, with respect to claim 17, that the examiner has failed
14 to address the portion of the claim pertaining to "a partial indication", the examiner does not find
15 the argument persuasive. The claim language requires one of "a none indication" (equivalent to
16 a NACK), "a partial indication", or "a done indication" (equivalent to an ACK). Because the
17 examiner has addressed two of the three options, and the claim language only requires one of the
18 three options, the examiner has show that the prior art meets this limitation. Therefore, the
19 examiner does not find the argument persuasive.

20 Regarding the applicants' request for proof regarding the examiners' official notice with
21 respect to claim 17, the examiner directs the applicants to Slaughter et al. (US Patent Number

6,014,669) Col. 6 Lines 15-67, which evidences the knowledge of ACKs and NACKS used in the art of data synchronization. Therefore, the examiner does not find the argument persuasive.

Regarding the applicants' argument with respect to claim 33, that Burch does not teach synchronizing the credentials when the event handler receives a **plurality of unique event notifications**..., the examiner does not find the argument persuasive. Paragraphs 0040-0044 of Burch show that the principal receives an indication that changes have been made (first event notification) and that the principal receives re-establishment communications from the identity service (second event notification) at which point the credentials are synchronized. As such, the examiner does not find the argument persuasive.

All objections and rejections not set forth below have been withdrawn.

Claims 1-27,29,32,33,35-44, and 49 have been examined.

Information Disclosure Statement

The information disclosure statement(s) (IDS) submitted on 3/1/2010 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statements.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1 Claims 33, and 35-44, are rejected under 35 U.S.C. 103(a) as being unpatentable over
2 Burch et al. (US Patent Application Publication 2005/0171872) hereinafter referred to as Burch,
3 and further in view of Brovick et al. ("WINDOWS® 2000 Active Directory™") hereinafter
4 referred to as Brovick, and further in view of Rao et al. (US Patent Number 5,689706)
5 hereinafter referred to as Rao.

6 Regarding claim 33, Burch disclosed a system comprising: an event handler to receive
7 event notifications (See Burch Paragraph 0043-0044); and a synchronizing module operatively
8 associated with the event handler to synchronize local credentials and remote credentials if the
9 local and remote credentials are different from one another (See Burch Paragraph 0043-0044),
10 but Burch failed to specifically disclose enumerating local credentials and remote credentials in
11 response to the event notification, or wherein the event notification is at least one of the
12 following: a lock event, and an unlock event. Burch did, however, disclose that the credential
13 stores are directories (See Burch Paragraph 0022).

14 Brovick teaches that Active Directory is a directory service, which provided replication
15 of data between devices, as well as synchronization of the data between the devices in an Active
16 Directory (See Brovick First Paragraph), and that in order to maintain synchronization between
17 each copy of the directory, each update to a directory is provided with a USN which is compared
18 with USNs in other devices to determine which updates need to be replicated (See Brovick
19 "Keeping Track").

20 It would have been obvious to the ordinary person skilled in the art at the time of
21 invention to employ the teachings of Brovick in the credential store system of Burch by utilizing
22 Active Directory to provided the directory service and the synchronization between the

1 credential stores. This would have been obvious because the ordinary person skilled in the art at
2 the time of invention would have been motivated to provide quick and efficient directory
3 services across the distributed credential store.

4 Rao teaches that in a synchronization system, the operating system can perform a lock
5 function on the replicated data in order to prevent changes to the data during the synchronization
6 (Rao Col. 16 Line 54 – Col. 17 Line 4).

7 It would have been obvious to the ordinary person skilled in the art at the time of
8 invention to have employed the teachings of Rao in the system of Brovick by performing the
9 synchronization in response to locking the data. This would have been obvious because the
10 ordinary person skilled in the art would have been motivated to prevent the data from being
11 altered during the synchronization operation.

12 Regarding claim 35, Burch, Brovick, and Rao taught that the credentials include at least
13 one of the following: an encryption credential, a token, an asymmetric key pair, a symmetric key,
14 a digital certificate, an XrML license, an authentication credential, an authorization credential
15 (See Burch Paragraphs 0022-0024).

16 Regarding claim 36, Burch, Brovick, and Rao taught that a local store manager to
17 enumerate the local credentials for the synchronizing module (See Brovick “Keeping Track”).

18 Regarding claim 37, Burch, Brovick, and Rao taught that a remote store manager to
19 enumerate the remote credentials for the synchronizing module (See Brovick “Keeping Track”).

20 Regarding claim 38, Burch, Brovick, and Rao taught that the local credentials are stored
21 in a local cache (See Burch Paragraph 0053).

Regarding claim 39, Burch, Brovick, and Rao taught that the local credentials are stored in a local cache provided at any number (n) of clients (See Burch Paragraph 0053).

Regarding claim 40, Burch, Brovick, and Rao taught that the local credentials are encrypted using a master key (See Burch Paragraph 0025).

Regarding claim 41, Burch, Brovick, and Rao taught that the remote credentials are stored in a remote cache (See Burch Paragraph 0056).

Regarding claim 42, Burch, Brovick, and Rao taught that the local credentials are stored in a remote cache provided at any number (n) of hosts (see Burch Paragraph 0056).

Regarding claim 43, Burch, Brovick, and Rao taught that the remote credentials are maintained by a remote directory service (See Burch Paragraphs 0022 and 0056).

Regarding claim 44, Burch, Brovick, and Rao taught that the remote credentials are encrypted (See Burch Paragraph 0025).

Claims 17, 18, 20-27, 29, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burch, and further in view of Brovick, and further in view of Heinrich et al. (US Patent Number 6,510,522) hereinafter referred to as Heinrich.

Regarding claim 17, Burch disclosed a method comprising: receiving an event notification (See Burch Paragraph 0043); and synchronizing the local credentials and remote credentials (See Burch Paragraph 0043-0044) and changing at least one of the local credentials in a first local credential cache (Burch Paragraphs 0043-0044) wherein the credential comprises at least one of the following: a token (Burch Certificate), and an XrML license, but Burch failed to

specifically disclose enumerating local credentials and remote credentials in response to the event notification. Burch did, however, disclose that the credential stores are directories (See Burch Paragraph 0022).

Burch further failed to disclose a synchronization module which: sorts the local credentials and the remote credentials into a local credential array and a remote credential array respectively and linearly compares the local credential array and the remote credential array; and stores a state file for conflict resolution, the state file comprising: a file version; a flag, wherein the flag indicates whether the credential is user protected (but Burch did disclose that some credentials are user protected in Paragraph 0055); and a credential state, wherein the credential state comprises: last time synchronization module called; last time local store changed; and last time remote cache changed.

Burch further failed to disclose that the change to the first local credential was removal from the cache associated with a first device based upon the synchronizing module comparing the local credential array and the remote credential array, wherein the credential removed from the first local credential cache is identified and tagged by the synchronization module in a remote credential cache; and based on the synchronizing module comparing the local credential array and the remote credential array, removing the tagged credential from a second local credential cache associated with a second device, wherein the first device is different than the second device, without rewriting the tagged credential to the remote credential cache. However, addition and deletion of credentials in a credential store was well known in the art at the time of invention, and would have been obvious to the ordinary person skilled in the art at the time of invention. This would have been obvious because the ordinary person skilled in the art would

1 have been motivated to have allowed flexibility in the authorizations granted within the system
2 by allowing authorizations to be granted and taken away.

3
4 Brovick teaches that Active Directory is a directory service, which provided replication
5 of data between devices, as well as synchronization of the data between the devices in an Active
6 Directory (See Brovick First Paragraph), and that in order to maintain synchronization between
7 each copy of the directory, each update to a directory is provided with a USN which is compared
8 with USNs in other devices to determine which updates need to be replicated (See Brovick
9 "Keeping Track"). Brovick further teaches keeping track of timestamps of when the local and
10 remote (replicated) data was updated (See Brovick "Conflict Resolution"), and when
11 synchronization was last performed (See Brovick "Intra-Site Replication"). Brovick further
12 teaches that when a change in one local cache is made, the domain controller will mark the
13 change in an up-to-date vector, and then replicate the change in other caches throughout the
14 network without undoing the change (Brovick "Keeping Track").

15 Further, it was well known in the art at the time of invention to sort data into arrays for
16 linear comparison in order to ease the complexity of the comparison, as well as to use flags to
17 track Boolean properties.

18 It would have been obvious to the ordinary person skilled in the art at the time of
19 invention to employ the teachings of Brovick in the credential store system of Burch by utilizing
20 Active Directory to provided the directory service and the synchronization between the
21 credential stores. This would have been obvious because the ordinary person skilled in the art at
22 the time of invention would have been motivated to provide quick and efficient directory

1 services across the distributed credential store. It further would have been obvious to the
2 ordinary person skilled in the art at the time of invention to have sorted the local and remote
3 credentials into a local and remote credential array, and then linearly comparing the arrays to
4 determine conflicts which need to be resolved. This would have been obvious because ordinary
5 person skilled in the art at the time of invention would have been motivated to ease the
6 complexity of the comparison for determining conflicts between the servers. In this
7 combination, the USN reads on the claimed version number. Further still, it would have been
8 obvious to the ordinary person skilled in the art at the time of invention to have stored a flag for
9 each entry in the credential store to track whether the entry was personal (user protected) or not.
10 This would have been obvious because the ordinary person skilled in the art would have been
11 motivated to utilize a well known method for tracking Boolean properties to track the Boolean
12 property of personal entry or not. Even further still, it would have been obvious to the ordinary
13 person skilled in the art at the time of invention to have employed the teachings of Brovick in the
14 synchronization system by marking the deletion of a credential from the cache, and propagating
15 the change to the other caches in the network. This would have been obvious because the
16 ordinary person skilled in the art would have been motivated to synchronize the caches.

17 Burch further failed to disclose that the event notification comprised an unlock event.

18 Heinrich teaches that credentials can be protected from alteration by locking access to the
19 memory locations containing the credentials, and that upon unlocking the memory the
20 credentials can be updated (Heinrich Abstract).

21 It would have been obvious to the ordinary person skilled in the art at the time of
22 invention to have employed the teachings of Heinrich in the system of Brovick by locking and

1 unlocking the memory locations holding the credentials, and performing the synchronization in
2 response to unlocking. This would have been obvious because the ordinary person skilled in the
3 art would have been motivated to prevent the data from being altered outside of the update and
4 synchronization operations.

5 Further still, Brovick failed to specifically disclose handling errors, wherein error
6 handling comprises returning a write state indication of a status of a credential write operation,
7 wherein the write state indication consists of one of the following: a none indication, wherein the
8 none indication comprises an indication that the credential was not altered; a partial indication,
9 wherein the partial indication comprises an indication that the credential was partially altered; or
10 a done indication, wherein the done indication comprises an indication that the credential was
11 successfully changed. However, it was well known in the art of data transmission and
12 synchronization at the time of invention to provide an acknowledgement of successful
13 synchronization in the event that the synchronization of the data was completed successfully. As
14 such, it would have been obvious to the ordinary person skilled in the art at the time of invention
15 to have employed ACKs and NACKs of successful completion of synchronization. This would
16 have been obvious because the ordinary person skilled in the art would have been motivated to
17 ensure the synchronization operation was successful.

18 Regarding claim 18, Burch, Brovick, and Heinrich taught that synchronizing the local
19 credentials and the remote credentials is based on at least one time-stamp associated with the
20 local credentials and at least one time-stamp associated with the remote credentials (See Brovick
21 Conflict Resolution).

1 Regarding claim 20, Burch, Brovick, and Heinrich taught writing at least one of the local
2 credentials to a remote credential cache (See Burch Paragraph 0056).

3 Regarding claim 21, Burch, Brovick, and Heinrich taught writing at least one of the
4 remote credentials to a local credential cache (See Burch Paragraph 0053).

5 Regarding claims 22-23, while Burch, Brovick, and Heinrich taught that changes in local
6 credentials are duplicated in the remote credential store, and vice versa, they failed to specifically
7 disclose deleting remote credentials. However, addition and deletion of credentials in a
8 credential store is well known, and would have been obvious to the ordinary person skilled in the
9 art at the time of invention. This would have been obvious because the ordinary person skilled in
10 the art would have been motivated to have allowed flexibility in the authorizations granted
11 within the system by allowing authorizations to be granted and taken away.

12 Regarding claim 24, Burch, Brovick, and Heinrich taught modifying at least one of the
13 local credentials at a local credential cache based on at least one of the remote credentials (See
14 Burch Paragraph 0053).

15 Regarding claim 25, Burch, Brovick, and Heinrich taught modifying at least one of the
16 remote credentials at a remote credential cache based on at least one of the local credentials See
17 Burch Paragraph 0056).

18 Regarding claim 26, Burch, Brovick, and Heinrich taught updating a list of local
19 credentials (See Brovick "Keeping Track").

20 Regarding claim 27, Burch, Brovick, and Heinrich taught updating a list of remote
21 credentials (See Brovick "Keeping Track").

Regarding claim 29, Burch, Brovick, and Heinrich taught determining a state of the remote credentials dynamically (See Brovick "Intra-Site Replication" and "Inter-Site Replication").

Regarding claim 32, Burch, Brovick, and Heinrich taught resolving a conflict of state between the local credentials and the remote credentials (See Burch Paragraph 0044 and Brovick "Conflict Resolution").

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Burch, Brovick, and Heinrich as applied to claim 17, and further in view of Yianilos et al. (US Patent Application Publication 2002/0029214) hereinafter referred to as Yianilos.

Burch, Brovick, and Heinrich disclosed detection of changes between local and remote credentials, but failed to disclose that the synchronizing was based on a comparison of hash values.

Yianilos teaches an alternative method for detecting differences between entries in a synchronization system which involves generating a hash for the local data and a hash for the remote data, and comparing the hashes, wherein if the hashes are different then a change has been detected and synchronization is required (See Yianilos Paragraphs 0083 – 0084).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Yianilos in the synchronization system of Burch, Brovick, and Heinrich by detecting changes by comparing hashes of the local and remote credential stores. This would have been obvious because the ordinary person skilled in the art would have been motivated to minimize the network traffic generated by the synchronization.

Allowable Subject Matter

Claims 1-16, and 49 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The applicants' arguments have been found persuasive. While the prior art does teach enumerating and synchronizing credentials in response to various events, the prior art does not teach the specific combination of limitations as claimed. For example, the prior art does not teach enumerating credentials in response to each of a lock event, a startup event, a shutdown event, a logon event, a logoff event, an unlock event, a session event, a timer event, a manual request, and a credential update event, evaluating local and remote credentials based upon the enumerating, and synchronizing the local and the remote credentials based upon the evaluation.

Conclusion

Claims 17-27,29,32,33, and 35-44 have been rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW T. HENNING whose telephone number is (571)272-3790. The examiner can normally be reached on M-F 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571)272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2431

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew T Henning/
Primary Examiner, Art Unit 2431